USAID NIGERIA RENEWABLE ENERGY AND ENERGY EFFICIENCY PROJECT (REEEP)

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QUARTERLY REPORT, FY 2014 Q4

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USAID Nigeria Renewable Energy and Energy Efficiency Project (REEEP)
Quarterly Report, FY 2014 Q4
July 1 – September 30, 2014

PURPOSE OF DOCUMENT

This document reports the accomplishments of the Nigeria Renewable Energy and Energy Efficiency Project on its Year 1 Quarter 4 of implementation, covering the period July 1, 2014 to September 30, 2014.

REEEP is being implemented under the United States for International Development by Winrock International, Contract Agreement No. AID-OAA-L-11-00002.

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LIST OF ACRONYMS

AMORE	Alliance for Mindanao Off-Grid Renewable Energy
AtRE	Access to Renewable Energy Program
BOI	Bank of Industry Nigeria
CDM	Clean Development Mechanism
CE	Clean energy
CHAI	Clinton Health Access Initiative
CO^2	Carbon dioxide
COP	Chief of party
COREN	Council for the Regulation of Engineering of Nigeria
CREN	Council for Renewable Energy of Nigeria
DCA	Development Credit Authority
ECN	Energy Commission of Nigeria
ECREEE	Ecowas Centre for RE & Energy Efficiency
GDA	Global Development Alliance
GHG	Greenhouse gas
GIZ	Gesellschaft für Internationale Zusammenarbeit
GON	Government of Nigeria
IEC	Information, education, and communications
IPP	Independent power producer
IRENA	International renewable energy agency
KWh	Kilowatt hour
LASMI	Lagos State Microfinance Institution Initiative
LPG	DCA loan portfolio guarantee program
MARD	Ministry of Agriculture and Rural Development
MDA	Ministries Departments and Agencies
M&E	Monitoring and evaluation
MFI	Microfinance institution
MT	Metric Ton
MW	Megawatt
NAEE	Nigeria Alternative Energy Expo
NAPTIN	National Power Training Institute of Nigeria
NBTS	National Blood Transfusion Service
NCS	Nigeria Customs Service
NPHCDA	National Primary Health Care Development Agency
NTT	Nayo Tropical Technology
O&M	Operations and maintenance
PEPFAR	Presidential Emergency Plan for AIDS Relief
PFAN	Private Financing Advisory Network
PV	Solar photovoltaic
RE/ EE	Renewable energy/ Energy Efficiency
REEEP	Renewable Energy and Energy Efficiency Program
REMP	Renewable Energy Master Plan
RUWES	Rural Women Empowerment Scheme
SHP	Small hydro power
SME	Small and medium enterprise
STTA	Short-term technical assistance
SON	Standards Organization of Nigeria

EXECUTIVE SUMMARY

The USAID Nigeria Renewable Energy and Energy Efficiency Project (REEEP) is a four-year effort (March 2014 – March 2018) to facilitate the development and financing of renewable energy and energy efficiency market in Nigeria. The project provides technical assistance and contributes to USAID's goal of developing Renewable Energy (RE) and Energy Efficiency (EE) markets in Nigeria.

A Winrock International lead Abuja based team is implementing the project to meet 4 component areas that are critical to helping increase access to renewable energy and energy efficiency technologies in Nigeria.

Component 1: To increase access to clean energy financing for project developers.
Component 2: To provide technical assistance to financial institutions.
Component 3: To provide vocational training and creating awareness of RE/EE benefits.
Component 4: To enhance governance to enact enabling policies for RE/EE project development.

In Quarter 4, Winrock undertook a number of activities to build the capacity of financial institutions, develop and cultivate a pipeline of potentially bankable project activities for assistance (both financial and technical), create relationships with governmental officials, NGOs, and other international donors, and to forge partnerships with technical training institutions. Winrock was able to lay the groundwork for important action in years 2-4, as well as accomplish meaningful results in Quarter 4.

During the quarter 4, Winrock's REEEP team continued with series of advocacy visits to USAID funded projects like MARKETS II and FHI 360, a USAID HIV/AIDS funded project. Other places visited included Government of Nigeria Ministry of Environment, Energy Commission of Nigeria, University of Nigeria Nsukka Energy Research Centre and Sokoto State Energy Centre other funding partners like UNDP, GIZ and RE and EE project developers and actors and engendered partnerships to support project implementations.

To help promote the project and USAID, as well as engage a wide variety of stakeholders, Winrock during the quarter was also able to reach a large number of project developers through a collaboration with CTI PFAN for the West Africa Forum for Clean Energy Financing (WAFCEF II). Winrock worked with CTI PFAN to organize a 2 day Roadshow in Abuja and Lagos to share the successes of WAFCEF I and to promote WAFCEF II and increasing access to clean energy financing through both REEEP and CTI PFAN.

Winrock spent considerable time and effort engaging Ecobank and Fortis Micro Finance Bank. Both banks were recipients of significant technical assistance and trainings on RE/EE technologies and financing. Winrock is currently working with these banks to help them build their pipelines and provide private sector finance to a wide variety of project recipients.

The activities in Year 1 Quarter 4 have set the stage for rapid action in the coming years of the project by building relationship across the county and across component activities. The following report details Year 1 Quarter 4 activities, results, and lessons learned.

PROGRAM DESCRIPTION

The overall goal of USAID's Renewable Energy and Energy Efficiency Program in Nigeria (REEEP) is to improve Nigeria's access to renewable energy technologies, improve the financing of renewable energy technologies, use renewable energy technologies to improve various sectors like the Agricultural and Health sectors, mitigate climate change, reduce carbon emissions, increase economic opportunities, improve employment and sustain development. To achieve this goal, USAID's Renewable Energy and Energy Efficiency Program in Nigeria aims to achieve the following Tasks:

- **Task 1: To increase access to clean energy financing for project developers.**

This component focuses on developing the capacity of companies in the clean energy sector and other selected sectors that would benefit from using RE through targeted training and capacity-building activities. Winrock will focus on small and medium-scale SMEs private sector investments in clean energy to increase their access to finance for RE/ EE Projects.

- **Task 2: To provide technical assistance to financial institutions.**

Most Nigerian banks are highly conservative in their lending to businesses, often requiring in excess of 200 percent collateral in relation to loan value. As a result, the majority of Nigerian businesses have little or no access to commercial credit. RE/EE lending is generally seen as presenting additional risk, as most financial institutions do not know how to calculate credit-risk analysis for RE/EE projects. Many lenders are skeptical that meaningful cash flow can be generated from RE/EE projects or doubt that the cash flow can be relied on to repay loans. In this Component, Winrock will provide technical assistance to financial institutions to encourage lending on more favorable terms to RE/EE project developers and for RE/EE technology.

- **Task 3: To provide vocational training and creating awareness of RE/EE benefits.**

A major challenge encountered in RE and EE project development in Nigeria is the lack of qualified and competent technical support staff to install and maintain systems and low awareness of technology and the benefits. Winrock in this component intends to use the following series of activities to increase awareness and technical capacity in Nigeria:

- **Task 4: To enhance governance to enact enabling policies for RE/EE project development.**

The lack of progress to enact and enforce energy policy reforms stems from policy makers' and implementers' limited understanding of the enabling environment needed to incentivize greater private sector participation among other reasons. In this component, Winrock will strengthen the technical capacity of government officials, private sector actors, and national policy regimes that directly influence and catalyze investment in clean energy technologies, practices, and policies.

Through these interventions, the program shall result in tangible reductions in greenhouse gas emissions over the short and long term by creating a facilitative investment, decision-making, and operational climate for private and public sector participation in the clean energy sector as well as poverty reduction, private sector-led growth, energy security and energy access.

MAJOR ACCOMPLISHMENTS FOR YEAR 1 QUARTER 4

During the Quarter 4, Winrock made modest progress against performance indicators even as the REEEP Monitoring and Evaluation Plan is still under review. Below is a summary of the indicators being considered in the Monitoring and Evaluation Plan and the results recorded;

Table 1. Targets vs. Accomplishments	
IR 1: **Access to RE/ EE financing by social and economic businesses improved**	
	USG Indicator 4.8-7
Indicator: Greenhouse gas (GHG) emissions, estimated in metric tons of CO2e, reduced, sequestered and/ or avoided as a result of USG assistance Target year 1: 186 Metric tons of CO_2 Actual year 1: 3.484 Metric tons of CO_2 Remarks: The result was gotten from the installation of solar at the REEEP office.	
	USG Indicator 4.4.1-31
Indicator: Number of beneficiaries with improved energy services due to USG assistance Target year 1: 800 Actual year 1: 10 Remarks: These are number of Staff benefitting from the Winrock International Nigeria field office solar installation	
	USG Indicator 4.8.2-32
Indicator: Clean energy generation capacity installed or rehabilitated as a result of USG assistance Target year 1: 0.075 Megawatts Actual year 1: 0.0048 Megawatts Remarks: This is the unit installed in our office	
	USG Indicator 4.8.2-31
Indicator: Expected lifetime energy savings from EE or energy conservation as a result of USG assistance Target year 1: 5,256 Gigajoules Actual year 1: 38.016 Gigajoules Remarks: This is lifetime energy savings from the office installation	
	Custom Indicator N/A (custom)
Indicator: Number of public and private buildings, including medical facilities, retrofitted with clean energy Target year 1: 1 Actual year 1: 1 Remarks: The result here is for the Winrock office that was retrofitted	
IR 2: **Capacity of financial institutions and DCA Banks developed**	
	USG Indicator 4.3.2-6
Indicator: Amount of leveraged private sector financing mobilized with DCA guarantees	

Target year 1: $300,000
Actual year 1: $112,500
Remarks: One DCA loan was provided under REEEP by Ecobank. More will be given out in year 2. The beneficiary is SME Funds, one of the winners of the UNDP/BOI Access to Renewable Energy Project pipeline. Facility approved is working capital to produce gel from waste materials (such as saw dust, water hyacinth etc) for cooking energy.

IR 3: **Capacity of RE/ EE vocational institutions enhanced**

	USG Indicator 4.8.2-14

Indicator: Number of institutions with improved capacity to address climate change issues as a result of USG assistance

Target year 1: 2
Actual year 1: 2
Remarks: The capacity of Ecobank Plc and Fortis MFB were built

	USG Indicator N/A (custom)

Indicator: Number of clean energy jobs created disaggregated by gender and age

Target year 1: 20
Actual year 1: Zero
Remarks: We have not recorded jobs created as result of our interventions

	USG Indicator 4.8.2-6

Indicator: Person hours of training completed in technical energy fields supported by USG assistance
Target year 1: 600 person hours
Actual year 1: 1,104 person hours
Remarks: We have target of 3 trainings for 10 trainees each at the average of 20 hours of training. We conducted 2 trainings with 46 persons in attendance for on the average of 8 hours daily.

	Custom Indicator N/A (custom)

Indicator: Number of people reached with increased information on EE and conservative measures
Target year 1: 50,000
Actual year 1: 232
Remark: These figures include attendance from CTI/ PFAN Roadshow, and Meetings from UNN Energy Centre, Sokoto Energy Centre and Afe Babalola University Ado Ekiti**.** It excludes events, conferences and seminars where the COP made presentations. A survey will be carried out by the M&E specialist to ascertain the numbers reached through these media.

IR 4: **RE and EE policy environment strengthened**

	USG Indicator 4.8.2-28

Indicator: Number of laws, policies, strategies, plans, or regulations addressing climate change(mitigation or adaptation) and/or biodiversity conservation officially proposed, or adopted as a result of USG assistance
Target year 1: Zero
Actual year 1: Zero
Remarks: There is no target for this indicator in year and quarter under review. We report on this indicator in year 2 and year 3.

TECHNICAL ACTIVITIES AND ACCOMPLISHMENTS

Winrock was able to maintain and develop strong relationships in country during the quarter 4 of implementation. The focus of the project activities was on forging relationships with financial institutions, private sector partners, NGOS, government officials, and other donors to help lay the groundwork for successful project implementation in years 2-4 of the project. Winrock built strong relationships with other USAID funded projects, most notably the MARKETS II project and spent considerable time and effort working with agricultural processors to help identify energy opportunities to help improve business competitiveness. Winrock also worked extensively with Ecobank and Fortis Microfinance Bank, providing training and capacity building activities through our partners Crimson Capital LLC and Deva Access. Winrock also has built a pipeline of 23 potential projects for financing through the DCA mechanisms through our meetings and outreach activities—these project activities range from solar panels to power petrol filling stations to retrofitting hospitals with clean energy. Winrock has also collaborated with the Private-Financing Advisory Network (P-FAN) through the West Africa Forums for Clean Energy Financing (WAFCEF II) in Lagos and Abuja, helping to build the project pipeline and expand the notoriety of the program in the country.

Component 1: Access to clean energy financing

Component 1 focuses on developing the capacity of companies in the clean energy sector and other sectors that would benefit from using RE through targeted training and assistance. In Quarter 4, Winrock continued with identifying small and medium-scale SMEs private sector opportunities in clean energy to increase access to finance for RE/ EE Projects that will help to reduce SME costs and increase competitiveness. To deliver results in the component, the following task were performed:

- Development of REEEP pipeline of potential project developers;
- Assessment of opportunities in areas/sectors that support USAID/Nigeria's portfolio, notably the MARKETS II and HIV/AIDS programs;
- Identification of financing options and training of potential borrowers to access private finance.

Winrock is working with existing stakeholders, GON, project developers, international donors, and others to assess and build on the pipeline of renewable energy projects that may be eligible for debt or equity financing in Nigeria. The pipeline currently includes opportunities such as the NNPC Mega Stations, the General Hospital Abuja, Afebabalola University, and many others. The current and complete pipeline of projects is attached as an appendix.

Winrock has engaged with other USAID projects to coordinate with companies whose existing cash flow will stabilize or increase with a more reliable renewable energy source. Winrock is in active discussions with the USAID MARKETS II, who have provided us with pools of rice processors and have helped in building the project pipeline. Winrock has visited Agribusinesses including small and Integrated Rice Millers and rice farmers in Bida in Niger State, Abakaliki and Ikwo in Ebonyi State, Omor in Anambra State and Adani in Enugu State. Winrock carried out assessments to determine process energy needs and opportunities. A consultant from EUCORD visited Nigeria to meet with rice processors in late in Q4 and is expected to provide direction on the way forward of the assessment.

The REEEP Team visited the Afe Babalola University to explore the possibility of developing an alternative energy facility through Small hydro power. The university, in collaboration with a team of special consultants (Red 5 resources), is exploring the possibility of using the stream near the university for the purpose of hydro power generation. Currently, the University spends an average of N300,000,000 ($1,820,000) annually on fuel for diesel generators and maintenance costs. A tripartite team consisting of the University staff, Red 5 resources, and REEEP was formed to develop a bankable business plan that can help source for funds with credible investors. An MOU has been developed to help guide REEEP participation and activities in the project.

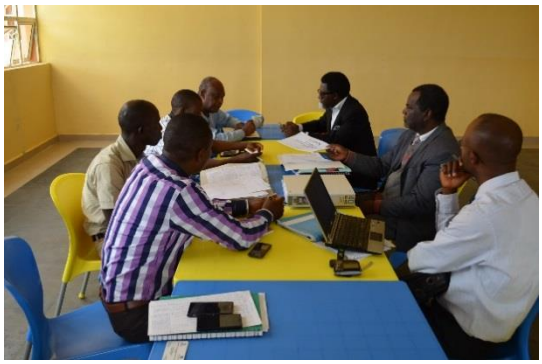


Figure 1: REEEP COP Segun Adaju at Afe Babalola University

Winrock identified other target sectors, projects, and project developers that can qualify for financing using DCA guarantees or from Ecobank and other private sector financial institutions. These sectors included mobile phone charging, shopping malls, estates and individuals who have shown interest in retrofitting their homes and businesses with RE technologies. REEEP has provided technical support to one of the project developers – Rubycom Technologies Ltd – to develop a business model as proof of concept for powering filling stations of the Nigerian National Petroleum Corporation with renewable energy. REEEP has also provided technical assistance to support the financing of renewable energy technologies to Abaji General Hospital in collaboration with Nayo Tropical technology (NTT).

Figure 2: Training on Solar PV Systems at Nayo Tropical Technologies

Winrock also met with several key project developers like NTT, GVE, Creeds Energy, Blue Camel Limited, Rubycom Tech Ltd and other projects developers around the country to learn more about their needs and support them to access to private finance to improve project implementation.

Identification of financing options and training of potential borrowers to access these opportunities will be carried out in the subsequent quarter. As a result we engaged a consultant in Nigeria who carried out an energy opportunity assessment with the aim of creating opportunities for renewable energy development and finance in various sectors of the economy (report to be made available in FY2015).

The deliverables recorded in this component for Quarter 4 under review include:

- Nigeria RE project pipeline template has been developed.
- A list of potential agricultural producers with the potential to generate energy from agricultural waste under MARKETS II.
- FHI 360, a USAID funded HIV/AIDS IP has been listed and engaged for collaboration in the health sector.

Component 2: Technical assistance to financial institution

Most Nigerian banks are highly conservative in their lending to businesses, often requiring in excess of 200 percent collateral in relation to loan value and short payback periods. As a result, the majority of Nigerian businesses have little or no viable access to commercial credit. RE/EE lending is generally seen as presenting additional risk, as most financial institutions do not know how to calculate credit-risk analysis for RE/EE projects. Many lenders are skeptical that meaningful cash flow can be generated from RE/EE projects or doubt that the cash flow can be relied on to repay loans.

In this Component, Winrock has provided technical assistance to financial institutions to encourage lending on more favorable terms to RE/EE project developers and for RE/EE technology. In Quarter 4, Winrock did the following to provide technical assistance for financial institutions:

- Delivered training and develop materials and guidelines for RE/EE lending for Ecobank and Fortis Microfinance bank;
- Supported marketing efforts to increase demand for RE/EE loans;
- Built and maintain relationships and coordinate regularly with a number of banks.

A 5-day training module was developed in collaboration with Crimson capital and capacity building program for Ecobank was held between July 21st and 24th 2014. 21 staff (Male= 12, Female= 9) were trained. The training included a study tour of RE installations in Lagos area to show the Bank staff the viability of the technology. The training included a technical workshop to show international best practices using case studies from Slovakia, Serbia, Eastern Europe, and India. It also provided technical trainings on energy efficiency, energy auditing, RE/EE technical interventions, and risk factors of RE/EE technologies.

During the July training it was discovered that Ecobank and its 600 branches in Nigeria each have two large diesel generators to ensure consistent power supply. **These generators require $10,000-$20,000 per month just for diesel fuel per bank.** Significant financial savings and reductions in CO_2 can be achieved just from energy efficiency and renewable energy measures taken at the bank itself!

One (1) DCA facility in the amount of $112,500 US Dollars amounting to N18, 000, 000 only in local currency was awarded to a customer in the fiscal year. The customer is a beneficiary of SME funds--a winner of the UNDP/BOI Access to Renewable Energy project—the facility produces gel from waste materials such as saw dust for cooking energy.

The REEEP team in partnership with local partner Deva Access conducted a 5-day training for the staff of Fortis Micro Finance Bank Ltd. The training which was titled ''Creating Access to Clean Energy through Micro- financing'' was held at Fortis MFB Ltd Training Hall located at Plot 2135 Herbert Macaulay Way, Wuse Zone 5, Abuja and took place from Monday September 15 to Friday September 19, 2014. The training was witnessed by USAID Nigeria and other Implementing Partners working in the energy and environmental related projects. A total number of 25 Staff (m=17, f=8) participated in the training which lasted between 8am to 4pm recording 936 person hours of training completed during the exercise. The training also included a study tour of RE installations in Abuja area. This activity will also be replicated to other financial institutions like Zenith bank, Diamond Bank and other partner bank in the subsequent years.

Figure 3: Participants recieving certificates at the completion of the Fortis Training. USAID's Imeh Okun pictured.

REEEP project also provided capacity building opportunity for the head, SME of Ecobank and the group head, micro credit of Fortis micro finance bank by recommending them for a four day workshop on financing solar energy technology in West Africa organized by IRENA and ECREEE in Lome, Togo from July 13th – 16th, 2014 which they fully attended alongside Winrock COP Segun Adaju.

During Quarter 4, the following deliverables were recorded under component 2:

- Winrock held engagement meetings with senior management staff of Ecobank and Fortis MFB.
- MOU was signed between Winrock and Fortis MFB.

- A consolidated trainings and capacity building program in collaboration with Crimson Capital and Deva Access were delivered to Ecobank between July 21st and 24th 2014, and Fortis Micro Finance Bank between September 15th and 19th 2014 respectively. The trainings included study tours of RE installations in Lagos and Abuja area.
- Winrock recommended key senior management staff of Ecobank and Fortis who attended the workshop on financing solar technology in West Africa organized by IRENA and ECREEE.
- Training report for Ecobank and Fortis MFB (attached as appendix)

Component 3: Trainings and awareness creation

A challenge of increasing the prevalence of renewable energy and energy efficiency solutions in Nigeria is the lack of qualified technical staff to install and maintain systems. There are few technical staff with awareness and specific training of international standards. And there is a low public understanding of the benefits financial and environmental benefits of the use of clean energy. In Component 3, Winrock seeks to help increase the technical capacity of RE/EE installers in country, as well as increase the awareness of RE/EE technologies among the public. In this component, Winrock implemented the following set of activities to increase awareness and technical capacity in Nigeria:

- Educational center training for RE and EE technologies;
- Promoted installer and project assessor professional certifications;
- Analyzed gender equality in training programs;
- Fostered awareness of RE and EE technologies and benefits.

Winrock is working to increase the technical capacity to install, maintain, and service RE/EE systems in Nigeria. Winrock in collaboration with University research and training centers, as well as private sector participants, is helping to build necessary capacity to expand clean energy systems.

Winrock has engaged with Energy Research Centers in Nsukka and Sokoto. On the 12th of August 2014, the team went to National Centre for Energy Research and Development situated at University of Nigeria Nsukka. It was a partnership/ joint visit of REEEP and GIZ to the centre to assess the capacity of the centre and to discuss partnership and collaboration. The centre has faculty of 35 research fellows and currently offering training courses in three areas; installation and maintenance of solar photovoltaic system, fabrication of solar thermal devices and design and construction of biogas digesters. The centre identified funding as a limitation to their performance as ECN on only provide funds for overhead cost and not for research and trainings. The REEEP team was taken around the centres' laboratory and workshop where the research and fabrications takes place.

Figure 4: Roof of Genesis International School, Solar PV

On the 5th of September, the REEEP team met with the Management of Sokoto Energy Centre for proper engagement and collaboration. The centre has 5 main component areas such as; Solar PV units, Solar Thermal units, Meteorology and wind, Bio mass and Small Hydro. These are the areas that REEEP in collaboration with NESP (GIZ funded) will be providing capacity to the centre.

Winrock is in collaboration with GIZ to implement a training program in partnership with identified training institutes in Nigeria. GIZ had previously conducted a mapping exercise of available RE training programs in Nigeria. These collaboration will help to save costs as well as avoid duplication of efforts. Winrock and GIZ is working out modalities for successful delivery of these training programs to all stakeholders in subsequent years.

To ensure full and meaningful participation of women through the life of the project, Winrock is working with Ministry of Environment through its RUWES (Rural Women Energy Security). Winrock will deliver trainings to the scheme that will be modeled after the USAID-funded Alliance for Mindanao Off-Grid RE (AMORE) project in the Philippines. The training module is being finalized to be implemented in FY2015.

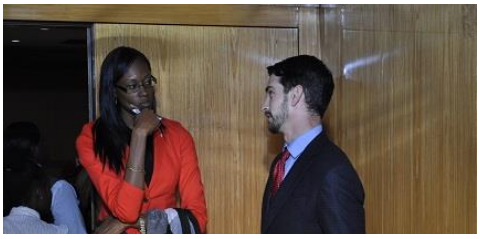


Figure 5: Paul Burman of Winrock and Stella Obot of Shell Petroleum at the REEEP Launch

Awareness of REEEP and the project objectives was created during the West Africa Forum for Clean Energy Financing (WAFCEF II), CTI PFAN organized 2 day Roadshow in Abuja and Lagos in partnership with Winrock. The half day Roadshow event was designed to share the successes of WAFCEF I and to promote WAFCEF II, with the objective of increasing the pool and quality of applications for WAFCEF II. The event provided guidance on the essentials of project proposals and applications as well as to highlight the benefits of the WAFCEF program to prospective applicants. A total of 68 participants (Abuja= 37, Lagos=31) were sensitized on the activities of REEEP.

The deliverables on component 3 for Quarter 4 were the following:

- Maintained relationship with GIZ.
- RE/EE training and materials to engage women participation is near completion;
- Winrock created awareness during the meetings with the Energy Research Centres and during the West Africa Forum for Clean Energy Financing (WAFCEF II), CTI PFAN Roadshow in Abuja and Lagos as well as the participants to our various training.

Table 1: List of Conferences attended by REEEP Staff in Quarter 4

S/NO	List of Conferences	Name of Staff in attendance	Relevance to REEEP
1.	IRENA Training, Togo	Segun Adaju	Capacity Building, Education
2.	West Africa Forum for Clean Energy Financing (WAFCEF II)- Abuja	Segun Adaju, Hyginus Eze & Tinyan Ogiehor	Publicity of REEEP, Access to clean energy financing
3.	West Africa Forum for Clean Energy Financing (WAFCEF II)- Lagos	Segun Adaju	Publicity of REEEP, Access to clean energy financing
4.	National Stakeholders Workshop on the Draft National Policy on Renewable Energy and Energy Efficiency- Abuja	Hyginus Eze	Publicity, Collaboration for Component 4- Governance.

Component 4: Governance

The enactment and enforcement of energy policy that creates a favorable environment for private sector investment in renewable energy and energy efficiency technologies is critical for the adoption and diffusion of critical technologies. This component is designed to help identify policy reforms that can be enacted and/or enforced that will help to increase private sector participation in the RE/EE markets. Winrock will create the much needed RE/EE policy framework and has embarked on the following activities:

- Support policies that encourage the clean energy investment;
- Support implementation of Government of Nigeria zero import duty for RE goods;

Winrock held several meetings with the Ministry of Environment for the purpose of engaging the Nigeria Custom Service (NCS) and the Standards Organization of Nigeria (SON), to conduct the knowledge gap assessment and as well, ascertain the current structure as regards RE products and help to reform the import process for RE/EE products to reduce tariffs, time in transit, and encourage use of RE/EE technologies.

Winrock is working with the World Bank and Federal Ministry of Environment to engage with the Ministries of Finance, Trade and Investments in supporting the NCS to setup dedicated RE task force. The World Bank will provide technical assistance to the Nigeria Customs Service to set up a task force on renewable energy and build capacity of the staff. The Winrock and World Bank collaboration will help to create awareness of RE and EE technologies, reform import duties and processes, and enhance speedy clearance of consignment of project developers applying the relevant customs duty rates, waivers and concessions. The activities will result in a small NCS RE/EE task force designed to oversee the speedy importation of necessary renewable energy technologies, and will thereafter serve as the Train the Trainers to replicate the process throughout NCS.

As part of the collaboration with the GON, the REEEP team attended a 2 day National Stakeholders Workshop on the Draft National Policy on Renewable Energy and Energy Efficiency organized by the Federal Ministry of Power. The event which took place at the Rock View Hotel, Abuja was aimed at reviewing the drafted National Energy Policy on Renewable Energy and Energy Efficiency. The workshop was attended by top government functionaries and dignitaries from international development organizations, civil society organization and the private sectors. The reviewed draft policy is still being awaited for finalization—REEEP will provide comments on the policy as appropriate.

ADMINISTRATIVE ACTIVITIES

Official/ Project Vehicle.

There were delays in the process of procurement of the project vehicle. A waiver was requested to procure the vehicle from a US vendor, but the vehicle was to be manufactured and shipped from South Africa. The vehicle waiver was provided and the vehicle was purchased early in the first quarter of FY2015.

Partnership Meetings.

Winrock has been coordinating regularly with main sub-contractors Crimson Capital and EUCORD and soliciting their input on first year activities for the project. Both Crimson Capital and EUCORD have signed contracts to begin work, and both have started activities under the project. Local partner, Deva Access, has also been contracted to provide capacity building activities in country. Winrock has also been coordinating with Butler Law Offices LLC, Council for Renewable Energy, Energy Commission of Nigeria, Nayo Tropical Technology, and Solar Sister to discuss first year implementation plans and areas of collaboration.

M&E Work Plan Development.

The Monitoring and Evaluation (M&E) Work Plan has been reviewed by USAID. The corrections and final approval is expected to take place within the first quarter of year 2.

Installing Office Solar.

The USAID Nigeria Renewable Energy and Energy Efficiency Program office at Flat 3, Block 51, E close, OAU Quarters, Maitama, Abuja, Nigeria was retrofitted during the quarter under review. After a long procurement and vetting process, Winrock selected vendor Creeds Energy to install a solar power system at the office to provide basic energy services for business operations. The installation was completed on the 17th of September, 2014 and done in accordance with international best practices and is presently serving as a model for future installations.

CHALLENGES ENCOUNTERED & LESSONS LEARNED

Nigeria is presently approaching general elections which commence in February of 2015 hence most government organizations that the REEEP project is in collaboration with have undergone one form of reshuffling or the other of key players in the industry. This particularly affected component 4 on governance. We will continue to engage government officials, but expect slowed progress on this until after the elections.

Also, the security situation in the country, especially in the northern part of Nigeria has had a negative impact on the ability to reach out some potential beneficiaries such as rice farmers and agricultural processors. Winrock will continue to monitor the security situation in the North and will respond accordingly.

PLANS FOR QUARTER 1-4 YEAR 2 TECHNICAL ACTIVITIES:

Component 1: Increase access to Clean Energy Financing

Winrock will work with existing stakeholders, project developers, international donors, and others to assess and build on the pipeline of renewable energy projects that may be eligible for debt or equity financing.

Specific tasks

- Work with private sector project developers affiliated with the USAID MARKETS II and HIV/AIDS programs to provide technical feasibility studies and cost-benefit analyses of implementing RE technologies in project activities
- Work with MARKETS II team to identify rice processing facilities with sufficient agricultural waste product for bio-power. Conduct feasibility studies, cost benefit analysis, and provide recommendations. (implemented in partnership with EUCORD)
- Visit health facilities in and around Abuja to acquire information regarding energy needs, usage, and current energy mix and costs. Create cost analysis for health facility managers to promote the life cycle benefits and reduced operating costs associated with renewable energy
- Work with USAID HIV/AIDS program, IHS and SCMS to help encourage adoption of RE for the development of new cold storage warehouses in Abuja and Lagos. Identify RE companies that can submit competitive bids to install and maintain RE technologies.
- Work with GE to conduct feasibility study for proposed waste bio-digester in partnership with Nigerian state government as well as identify beneficial financing opportunities for RE to be bundled with medical equipment to reduce long term operating costs of health facilities.
- Develop the pipeline to fund a minimum of 8 projects to the capacity of $1,900,000
- Work with BOI to identify existing SMEs in their portfolio that will require retro-fitting their businesses with RE technologies.
- Work with Coca-Cola on cold storage refrigeration for health care facilities.
- Liaise with PFAN to identify project developers for finance (debt and equity) through Roadshows and other collaboration.

Component 2: Provide technical Assistance to Financial Institutions

The following tasks will be undertaken in the next quarter; Work with senior management of Ecobank to form a dedicated core group of approximately 10 staff to develop sustainable, in-house RE/EE lending and train-the-trainer capacity.

- Work with Ecobank to build capacity for RE project financial analysis and assess current utilization of the mechanism (implemented by subcontractor Crimson Capital)
- Develop framework for engaging additional banks to participate in DCA mechanism
- Engage a connection with Fortis Micro Finance Bank and Solar Sister to increase access to financial mechanisms for small solar energy products for rural communities
- Improve the linkage between Ecobank and project developers seeking finance. Which we intend to achieve by facilitating bankers with adequate RE technologies trainings to understand the life cycle of RE projects, take bankers on site visits to understand and carry out meetings where bankers can meet with developers to fill in all possible gaps required.
- Work with Zenith bank to identify existing SMEs in their portfolio that will benefit from retro-fitting their businesses with RE technologies.
- Extending the DCA to other banks like Diamond Bank, Zenith Bank, Fortis MFB etc.

Component 3: Provide vocational training and awareness creation

Winrock intends to use the following series of activities to increase awareness and technical capacity on RE and EE technologies in Nigeria:

- Work with the Nigerian Energy Commission Energy Research Centers and private sector companies such as Nayo Tropical Technologies to develop a needs assessment, action plan, and target stakeholders for technical trainings and training curricula.
- Develop capacity building training for project developers that will encompass access to finance, energy as a service, business plan development, cost benefit analysis etc.
- Develop an IEC strategy using social media and newsletters in collaboration with CREN.

Component 4: Enhance governance to enact enabling policies for RE/EE project development

Winrock intends to create the much needed framework to breach this gap existing in the RE and EE sector in Nigeria due to lack of enactment and poor RE policy implementation of by embarking on the following:

- Coordinate NGOs, donor funded programs, and private stakeholders for a quarterly Renewable Energy Coalition. The group will be led by Winrock and the Council for Renewable Energy Nigeria.
- Work with the Ministry of Environment, the Ministry of Finance, and the Nigeria Customs Service to support a decree or legislation that reduces or eliminates import tariffs on renewable energy technology on a pilot scale. Work to be coordinated with similar World Bank activities.
- Engaging with the Standards Organization of Nigeria (SON) and relevant international authorities to develop international standards for RE/ EE technologies.

Appendixes

APPENDIX 1: REEEP Project Pipeline

#	Project/ Community Name	Lead Implementing Facilitator	Company/ Community size - number	Industry	Location	Renewable Energy availa-bilty	Present energy sources	Proposed project	Expected output / impact	Any other details / needs	Organizations with technical expertise	Contact Name, email, phone	Estimated Project Size (NGN/$)	Type of Assiss-tance	Winrock/ Sub Lead?	Proba-bility?	Additional info/ notes
1	NNPC Mega Stations	NNPC Retail dept.	37 Mega stations in various states of the federation	Oil & Gas	Country wide	Solar	Diesel powered generator and Electricity	To power the equipment of all Mega stations with solar power	Improved efficiency, increased savings	Meeting held with Rubycom, Winrock and NNPC	Rubycom Tech Ltd	08029921118		RE Finance, Feasibilty study and Technical assistance	Winrock HQ, Segun Adaju	30%	Discussions with MD in progress
2	General Hospital, Abaji	FCT Health Management Board	Health service to over 100,000 people	Health	Abaji	Solar	Epileptic electricity supply and short daily use of diesel generator	To power the light points and critical hospital equipment	Increse d access to health services	Visit in progress	Nayo tropical Technology	08097875304	N5,915,000 / $36000	Finance	Segun Adaju	20%	
3	Oyorokoto community	GVE Projects Ltd	Over 2000 houses	Fish farming	Andoni LGA, Rivers State.	Solar	Off grid community - sporadic uses of generators	To create a solar mini-grid that will power a remote community	Access to electricity	Visit in progress	GVE Limited	08064075280		Finance	Segun Adaju	10%	Discussions with project developer in progress

#	Project/ Community Name	Lead Implementing Facilitator	Company/ Community size - number	Industry	Location	Renewable Energy availa-bilty	Present energy sources	Proposed project	Expected output / impact	Any other details / needs	Organizations with technical expertise	Contact Name, email, phone	Estimated Project Size (NGN/$)	Type of Assiss-tance	Winrock/ Sub Lead?	Proba-bility?	Additional info/ notes
4	Afebabalola University, Ondo State.	The Chancellor	Over 5000 students annually	Education	Ado Ekiti	1 MW Small Hydro Power	Diesel powered generator and Electricity	To power laboratories and LTs with small hydro	Improved efficiency, increased savings,	Visited	Afebabalola University, Ondo State.	Red 5 Resources, Frank Sheen	N1,800,000,000	Technical assistance and finance.	Winrock HQ, Segun Adaju	30%	TA for business plan in progress.
5	Niger State	Tsoede Rice farming cooperative	Over 200 rice farmers	Agriculture USAID – MARKETS project	Doko, Bida, Lavun	Solar	Lack of water	Solar powered borehole	Increase in yield	Visit carried out	Onyx Rice mill	Alhaji Musa Ndache		RE Finanace	Segun Adaju, Niels Hanssens	20%	To identify a project developer - NTT preferably
6	Oyo State college of Agriculture	The provost	Over 3000 students annually	Education	Igboora, Oyo State.	Solar	Diesel powered generator and Electricity	To power laboratories and LTs with solar power	Improved efficiency, increased savings,	Not yet visited	Oyo State college of Agriculture	08033786712		Finance	Segun Adaju	5%	Talks in progress

#	Project/ Community Name	Lead Implementing Facilitator	Company/ Community size - number	Industry	Location	Renewable Energy availa-bilty	Present energy sources	Proposed project	Expected output / impact	Any other details / needs	Organizations with technical expertise	Contact Name, email, phone	Estimated Project Size (NGN/$)	Type of Assiss-tance	Winrock/ Sub Lead?	Proba-bility?	Additional info/ notes
7	Solar Roof Tops/Lease	Ecobank	Homes and offices	All sectors	Nationwide	Solar and Inverter backup systems	Diesel powered generator and Electricity	Consumer finance for RE products	Improved efficiency, increased savings,	Meeting with the bank in progress, toolkit to select Proj developers in making	Nayo tropical Technology, Blue Camel and Rubycom, Creeds, Folub, Blue Ocean,	Ecobank/ REEEP	Dependent on each request	Finance	Segun Adaju	40%	Interest rates issued - Terms and conditions in progress, amortization being developed
8	Ebonyi	ICEED Enterprises	Rice millers	Agriculture USAID – MARKETS project	Abakaliki	Biomass	Use of firewood	Rice husk briquettes	increase in production	Visited	ICEED/ UNN Nsukka	Patrick Mbam			Segun Adaju, Niels Hanssens	5%	
9	Ebonyi	ICEED Enterprises	Over 200 rice farmers	Agriculture USAID – MARKETS project	Abakaliki	Solar	Lack of water	Solar Bubble dryer	Increase in yield	Visit carried out	Interlinear Limited	Patrick Mbam	5,280,000NGN	RE Finanace	Segun Adaju, Niels Hanssens	5%	4 units of the Solar Bubble dryer

#	Project/ Community Name	Lead Implementing Facilitator	Company/ Community size - number	Industry	Location	Renewable Energy availa-bilty	Present energy sources	Proposed project	Expected output / impact	Any other details / needs	Organizations with technical expertise	Contact Name, email, phone	Estimated Project Size (NGN/$)	Type of Assiss-tance	Winrock/ Sub Lead?	Proba-bility?	Additional info/ notes
10	Anambra	Integrated rice millers - Anambra	Over 200 rice farmers	Agriculture USAID – MARKETS project	Omor, Anambra State	Bio mass	Fire wood	Use of Rice husk to make briquettes	Increase in yield		ICEED/ UNN Nsukka	Paul Eguatu			Segun Adaju, Niels Hanssens		
11	Anambra	Integrated rice millers - Anambra	Over 200 rice farmers	Agriculture USAID – MARKETS project	Omor, Anambra State	Solar	Lack of water	Solar Bubble dryer	Increase in yield	Visit carried out	Interlinear Limited	Paul Eguatu	5,280,000NGN	RE Finanace	Segun Adaju, Niels Hanssens	5%	4 units of the Solar Bubble dryer
12	Ondo State Cocoa farmers	Red 5 resources	over 200 farmers	Agriculture	Aponmu, Wasimi, Bolorunduro Ile Oluji, Idanre	Solar	Lack of drying technologies	Solar Bubble dryer	increase in yield	Visit carried out	Interlinear Limited	Frank Sheen	N6,600,000	Finance and TA	Segun Adaju	10%	5 units of 1 MT - SBD.
13	Forte Oil																
14	Oando										Blue Camel						
15	Rice millers - Kebbi			Agriculture USAID – MARKETS project													

#	Project/ Community Name	Lead Implementing Facilitator	Company/ Community size - number	Industry	Location	Renewable Energy availa-bilty	Present energy sources	Proposed project	Expected output / impact	Any other details / needs	Organizations with technical expertise	Contact Name, email, phone	Estimated Project Size (NGN/$)	Type of Assiss-tance	Winrock/ Sub Lead?	Proba-bility?	Additional info/ notes
16	Rice millers - Kano			Agriculture USAID – MARKETS project													
17	Rice millers - Sokoto			Agriculture USAID – MARKETS project													
18	Ecobank ATM Pavillion										Blue Camel						
19	Unity bank																
20	Health centers	Coca-Cola/ USAID	0	Health	TBD	TBD	Epileptic power supply		Improved health services			James Lycos - USAID & Clement Ugorji - Coca Cola				1%	
21	Health centers																
22	BOI	5 SMEs															

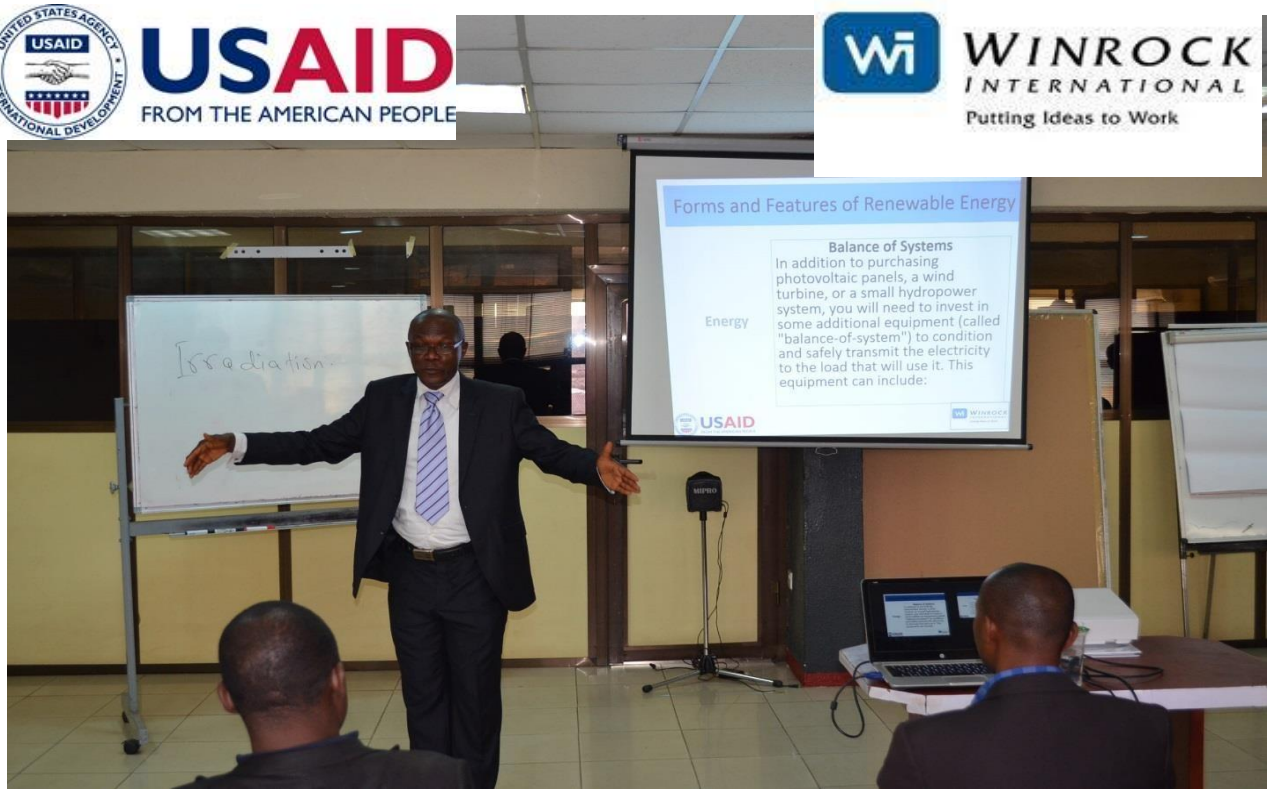
#	Project/ Community Name	Lead Implementing Facilitator	Company/ Community size - number	Industry	Location	Renewable Energy availa-bilty	Present energy sources	Proposed project	Expected output / impact	Any other details / needs	Organizations with technical expertise	Contact Name, email, phone	Estimated Project Size (NGN/$)	Type of Assiss-tance	Winrock/ Sub Lead?	Proba-bility?	Additional info/ notes
23	USADF	Winners and runners up		Several													

APPENDIX 2: Fortis Microfinance Bank Training

Evaluation of Training Programme

Creating Access to Clean Energy Through Micro-Financing

Held on September 15 – 19, 2014



Evaluation of Training Programme on

Creating Access to Clean Energy Through Micro-Finance

Held on September 15 – 19, 2014

For Officers of Fortis Microfinance Bank Limited, Abuja

Under the
Auspices of

RENEWABLE ENERGY AND ENERGY EFFICIENCY PROGRAM (REEEP)

OF USAID/WINROCK
INTERNATIONAL

Training and Evaluation by:

DevA Access and Empowerment Int'l Ltd/Gtee
Giving you a helping hand

RE Training Evaluation Report

Executive Summary

The five day training with the theme: ***Creating Access to Clean Energy Through Micro-Financing*** - proved to be very successful and all the set objectives were met. Factors responsible for this include the thorough commitment of the project sponsors – USAID, WINROCK and FORTIS, the participants' selection, and the design and delivery of the training modules. Members of executive management of these sponsoring organizations made regular visits and participated in the trainings. Fortis sent two members of the management team as participants while officials of REEEP at Winrock International were always there on each day from 8am to 4pm.

The training was made very interactive and explorative thus keeping the interests of the participants high through the five days. A significant aspect of the training that added thrust was the invitation of five different professionals and experts in the field who shared their knowledge and experience with the professionals. This was facilitated by the Chief of Party, Mr. Segun Adaju. Amongst those that came were the Renewable Energy Manager at USAID, the Country Director of Farmer-To-Farmer Program and the Renewable Energy Technology Specialist at Winrock International.

The participants were taken through 13 modules including financing examples and case studies on renewable energy financing and credit. Some of these included those of Aryavat Gramin Bank, Grameen Shakti, Bank of Punjab, M-Kopa, Grameen Ghana and Mega Bank.

- They became convinced of the viability of renewable energy technology especially in Nigeria
- They also became very much convinced of the future of renewable energy and the viability of renewable energy financing in Nigeria
- Participants became more and better informed of the different opportunities available in renewable energy financing for their bank
- They became aware of how to package and fund renewable energy projects
- The participants commenced right from the training on developing three different renewable energy finance products for their microfinance bank.
- Discussion has commenced between Fortis Microfinance Bank and Winrock on a working relationship and on signing an MOU for the development of the renewable energy finance sector of the bank.

- ❖ Fortis MFB Limited is already planning (with the support of Winrock International) on setting up a team of ten core staffs to drive the renewable energy financing business.

- ❖ The participants have muted the plan of selling the idea of using renewable energy products

  for their usual end of year gifts and awards to their clients. It may be pertinent to point out that annually, Fortis hosts about 5,000 of its clients – all women – to a business forum in Abuja.

Introduction

The training on creating access to renewable energy through micro-financing was held from September 15 to 19, 2014 at the Fortis MFB head Office in Wuse 5, Abuja and was sponsored by Winrock International under the USAID funded Renewable Energy and Energy Efficiency Program (REEEP).

The training sought to build the capacity of officers of Fortis Microfinance Bank Limited on effective ways of packaging, managing and marketing renewable energy products like solar and biogas systems to households, rural and off grid communities, micro businesses, industry, SMEs hospitals, infrastructural projects, agricultural products, building projects, and educational institutions.

The seminar format was adopted for the training to make for effective coverage of the subject while engendering participants' involvement in the various presentations. To achieve drill down effect, case studies, brainstorming sessions, breakout sessions and field visits were incorporated into the training. The third day of the training was devoted to field visits.

The training lasted for a total of 8 hours per day from 8am to 4pm and was limited to 25 participants who were selected from various departments of Fortis MFB Limited. An 87 page training manual (Training Manual For Senior and Middle Level Managers in Energy Financing**)** complete with exercises was handed to each participant on the opening day of the training while training slides for all the modules (13 modules in all) was given to each participant at the end of the training. The contents of the training manual was developed by USAID (United States Agency for International Development) and GVEP (Global Village Energy Partnership) and was adopted to suit the Nigerian local situation by Deva Access and Empowerment Int'l Ltd/Gtee.

The resource persons/presenters were drawn from the renewable energy industry and hence made practical application of the training material. They made good use of multimedia projectors, power-point slide presentations and video clips and case studies.

The objectives of the training were set out and highlighted as follows:

i. To educate participants and create awareness on benefits and features of the different renewable energy technology and products;

ii. To expose participants to the different renewable energy products, brands, dealers and manufacturers.

iii. To educate participants on renewable energy business and the investment/financing opportunities

iv. To equip participants with the requisite knowledge and skills required for packaging, managing and funding renewable energy products and projects.

The program for the training was as follows:

	DAY 1 – **Monday** September 15
Sept 15.	Opening Ceremonies: - Welcome / Introduction - Opening Address by USAID - Remarks by Fortis MFB Limited
	Tea Break
	Introduction to Renewable Energy
	Forms and Features of Renewable Energy
	Lunch
	Applications and Benefits of Renewable Energy:
	Manufacturers, Dealers and Brands of Renewable Energy Products
	RECAP
	DAY 2 - Tuesday September 16
Sept 16	Renewable Energy Installations in Nigeria and Elsewhere
	Ways of Financing Renewable Energy products and Projects
	Tea break
	Examples of Renewable Energy Credit:
	Lunch
	Case Studies in Renewable Energy Finance and Credit:
	RECAP
	DAY 3 - Wednesday September 17
Sept 17	Field Visits: 1. Renewable energy installation in a school - Genesis Christian Academy, Kuje 2. Renewable energy dealer and installer - Nayo Tropical Technology, Abuja
	DAY 4 – Thursday September 18
Sept 18	Renewable Energy Credit Considerations:
	Tea Break
	Renewable Energy Loan Packaging, Structuring and Management

	Lunch
	Risk Management in Renewable Energy Financing
	RECAP
	DAY 5 – Friday September 19
Sept 19	Developing Renewable Energy Loan Products:
	Tea break
	Marketing Renewable Energy Loan Products
	COURSE REVIEW AND RECAP.
	Closing Remarks and Certificates.
	Lunch and Close

In addition to the modules as above, five different renewable energy experts/industry players were brought in on various days to share knowledge and experiences with the participants. The experts brought in were:

1. Mrs. Ime Okon – Project Manager, Energy & Climate Change, USAID Nigeria
2. Alhaji Lawal Gada – Renewable Expert and Former Project Manager AtRE
3. Mr. Mike Bassey – Country Director, Farmer-To-Farmer AET/Nigeria
4. Mr. Nehemiah Emmanuel – Executive Director, Nehemiah Foundation International
5. Mr. Tinyan Ogiehor, Renewable Energy Tech Specialist, Winrock International.

The Chief of Party, REEEP, Mr. Segun Adaju, was present on all days, from Monday to Friday, taking active party in all the presentations and activities.

Product Demonstrations:

Participants were exposed to some product demonstrations, mainly:

1. Improved cookstove
2. Solar lanterns
3. Three lamp compact solar home system
4. Ethanol stove

Participants Selection

Participants were drawn from five functional departments of the bank with the highest number (11 or 44%) coming from business development and marketing arm in various branches of the branch within the Abuja environ. This is considered good as they are the ones that interface more with clients; market the bank's products and services and package credit requests. The beauty of this selection was seen too, in during the discussions, case studies and breakout sessions as the participants easily matched the cases with their field experiences and spotted opportunities and areas of the adoption and implementation.

Functional Area	No of Participants
Business Development and Marketing	11
Credit Risk Management	4
Internal Audit	2
Accounts / Financial Control	3
Admin and Services	3
Operations	2
TOTAL	**25**

Management Commitment

A remarkable aspect of the participants is that two of them are members of the senior management team, reflective of bank's seriousness with the project and the management's buy-in and commitment. These two senior members of management are the Chief Operating Officer and the Chief Human Capital Officer.

Gender Representation of Participants

Gender	No of Participants
Males	17
Females	8
TOTAL	**25**

In terms of gender only 5 females (20%) took part in the training. This is reflective of the gender imbalance in renewable energy business in Nigeria and of business and entrepreneurship generally. Of the five ladies that took part in the training, one is a departmental head; one is in risk management while three are in marketing. Increasing the number of women in future trainings is strongly recommended as women in households are major decision influencers; are active players in microenterprises and women can best reach these segments.

Age Representation

Age Bracket	No. of Participants
22 – 30	8
31 – 40	15
41 – 50	0
51 – 60	2
61+	0
Would not indicate	0
TOTAL	**25**

Participants were skewed to the age bracket of 31-40. This is attributable to the fact participants were selected from experienced staff with a minimum of four years microbanking experience. We consider this very good as it portends continuity of the scheme over a much longer period and the potential for knowledge/experience transfer. Besides, this is an energetic age bracket that can effectively market the finance products to clients. The two participants within the age bracket of

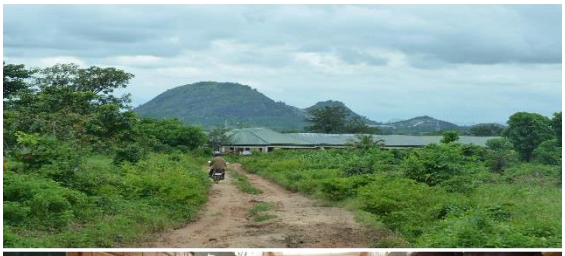
51 – 60 are the two senior officers of the bank including the chief Operating Officer who took part in the training.

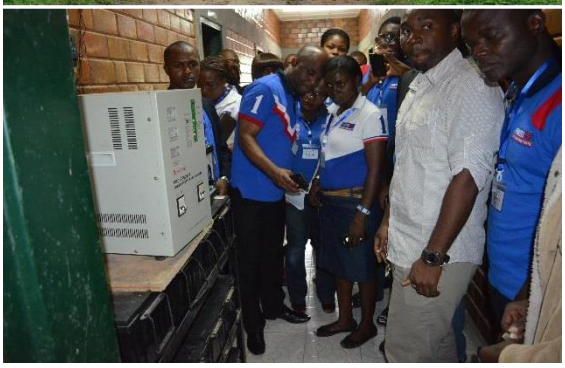
Case Studies:

The participants were taken through some renewable energy financing case studies. These included:

1. Aryavart Gramin Bank India
2. Peregrine Finance
3. Kiwibank
4. Andra bank
5. Grameen Shakti – desco model
6. Grameen Ghana
7. The partner models

8. Admirals Bank – solar step down loan, pay as you go loan, save now pay later loan
9. Citizens Ban – Energy Efficiency Loan, Home Improvement Loan
10. AFC – Home Energy Loan Programe (HELP)
11. M-KOPA
12. Mega Bank Nepal
13. Bank of Punjab
14. Deva Access – Renta Scheme
15. Barefoot Linkage program
16. KUSCCOs



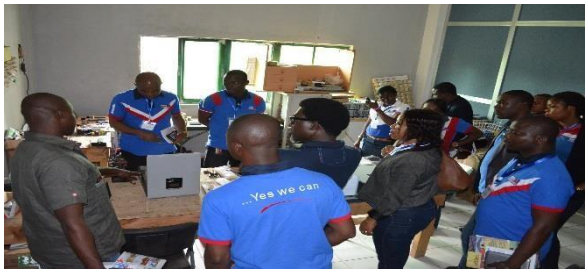


Field Visits

To have a first experience and interactions with renewable energy installations and operation, the participants were taken to three different installations within the Abuja area. These are Genesis Christian Academy in Kujea, Nayo tropical Technology and Winrock Office.**The Genesis Christian Academy** is a private primary and secondary educational centre operated by a Christian group. The school is located in a completely off grid rural community known as Rije in the Kuje area council of Abuja. The school is therefore completely dependent on its solar installations for the required energy to power its lighting system, classrooms, water borehole and ICT. The solar energy is provided via an array of 24 solar panels mounted on the roof, a battery bank of 12 batteries and an inverter system. The school is able to generate approximately 18KW of energy per day to service its needs.

Nayo Tropical Technology Limited is one of the major and foremost renewable energy companies in Nigeria. Located in Abuja, the company has a show room and mini workshop at its head office and a major workshop in the Gwagwalada Area Council of Abuja. The company sells and installs solar systems

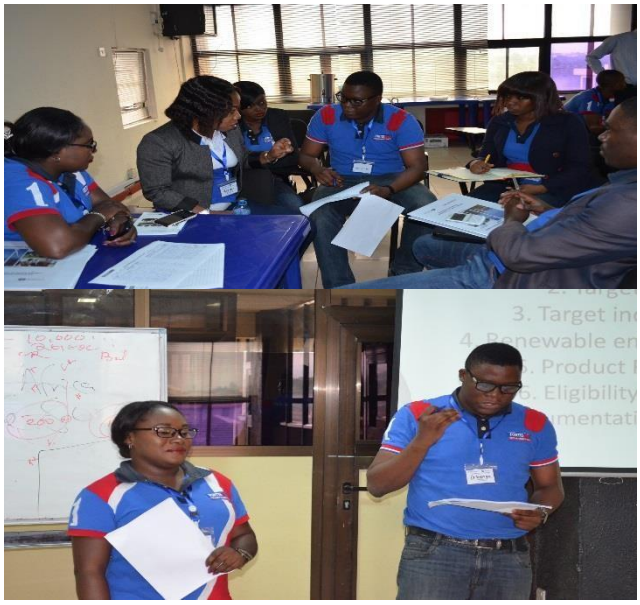
and wind energy systems for rural communities, businesses, hospitals, schools and homes. Amongst its products were solar freezers and solar fans. Two of the Company's technicians, Chidiebere and Chiazo took the participants round their products and explained the operation of each. Besides, the company powers its office via solar and has disconnected itself from grid electricity.



Winrock International has installed a solar powered system to provide energy for its office located in Maitama, Abuja. The participants were taken through how the office was sized for solar installation, the installation process and the system load including the battery bank and inverter.

Breakout Sessions and product Development

The participants were split into three breakout sessions and each given the task of developing a product together with the financing mechanism and marketing options. The groups were:



1. Improved Cook Stove Team
2. Solar Home System Team
3. DESCO Team. (Distributed Energy Services Company Model)

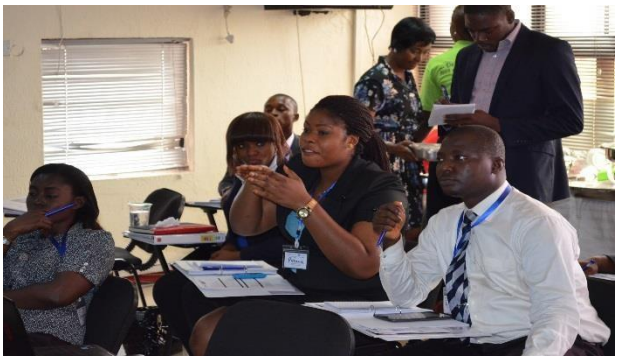
- ❖ The Improved Cookstove Team came up with a product they called Fortis Beta Stove targeted at Fortis women clients and priced at N5,000 each.
- ❖ The Solar Home System Team designed the Fortis Lite – a solar powered energy system financing scheme for households and microenterprises and priced at N30,000
- ❖ The third group, the DESCO team, came up with Fortis Bio-Digester, a financing scheme for the purchase of portable biogas system targeted at households and communities.

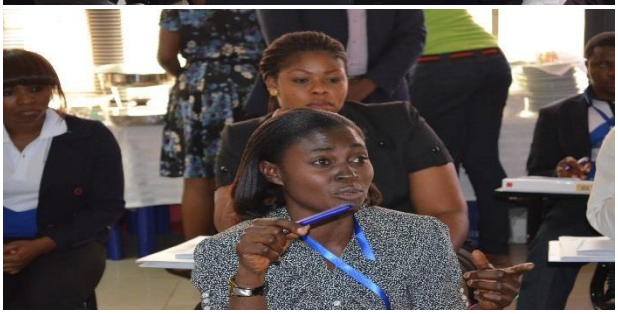
The participants were so motivated that after the closing ceremony on Friday, they sat back to continue work on their products for presentation to Fortis Management for approval.

PARTICIPANTS EVALUATION OF THE TRAINING

The participants were grateful for the opportunity to take part in the training. To many of them the training afforded them the opportunity to learn, improve their knowledge and skills and be in position to finance renewable energy products.

A major fall-out of the training was the consensus and resolution among the participants to make presentations to their management on the renewable energy financing schemes.





All the participants were asked to completed evaluation forms on their personal assessment of the training exercise:

1. Rating of Individual Modules

Participants were given evaluation sheets to rate

each of the modules presented and the presenters. The rating was based on a likert-type scale of 1

– 5; 1 being the lowest score and 5 being the highest score. The points on which the participants were asked to evaluate the modules are as follows:

Please rate the trainer for each aspect below 5=very effective and 1 = poor

	5	4	3	2	1
Knowledge of subject					
Organization & preparation					
Preparation					
Style and delivery					
Responsiveness to the group's needs					
Creating a good learning environment					

Rating of the modules on a score of 1 -5

	Poor	manageable	Not so	Good	Excellent
Overall Verdict	1	2	3	4	5
Training Structure	1	2	3	4	5
Training Content	1	2	3	4	5
Quality of Handouts	1	2	3	4	5
Session Length	1	2	3	4	5
Venue	1	2	3	4	5
Pace of Training	1	2	3	4	5
Exercises & Games	1	2	3	4	5
I learnt something useful	1	2	3	4	5

Ratings by the participants showed an average score of 4.5 per on all on the rating denominators. The only exception is rating point 6 – appropriate pace of class. Some of the participants were of the view that more time should have been allocated to the modules to allow for more drill down and more class involvement.

PARTICIPANTS SUGGESTIONS

Participants were asked about suggestions on follow-up to the training. Suggestions made include:

- Practical aspect of renewable energy training should be incorporated into the program

CRITICAL OBSERVATIONS

1. The level of management commitment from Fortis MFB Limited to the program and scheme is very commendable and no doubt contributed to the success of the training.

2. More women should be included on the list of participants in future programs. This suggestion is based on the socio-cultural background of Nigeria. In some communities, men are barred from interacting with women and in such situations only th women can talk to those women in Purdah. Secondly, women are the ones suffering the effects of open fire wood cooking and make the purchases of candles and kerosene lanterns.

OUR CONCLUSION AND SUGGESTIONS:

1. More women inclusion in renewable energy training programs should be deliberate and more inclusive for better impact and result.

2. Future trainings venues should be outside the banks' premises to minimize training interruptions and class distractions

3. Future training programs to include interactions with various users of renewable energy products.

4. The training should be replicated with other microfinance banks, at least two more in the

North, three in the South South and South East and two in the South West.

FOLLOW - UP:

To sustain the tempo of interest shown by both the management and staff of Fortis microfinance

Bank Limited towards renewable energy financing, we strongly suggest that:

1. Winrock pursues the execution of the MOU with the Bank and the bank assisted to launch its products within the next 90 days.

2. That the proposed team of ten core renewable energy product officials be set up within the next two weeks for eventual launching of the bank's renewable energy products.

3. The bank should consider adopting the M-Kopa, Aryavat Gramin Bank of Punjab and Deva Models for a start. Signed:

Chimaobi James Agwu

Lead Facilitator/CEO, Deva Access and Empowerment Int'l Ltd/Gtee

Appendix 3: Ecobank Training

Crimson Capital Mission Report Lagos, Nigeria, July 2014

This short report summarizes preparation meetings and the introductory Renewable Energy and Energy Efficiency (RE &EE) training program for Eco Bank, conducted July 21-25, 2014. The training program was developed and implemented by Mr. Ilan Wolkov, a consultant from Crimson Capital, subcontractor to Winrock on REEP.

Day 1: Eco Bank Introductory Meetings and Training Preparation

The first two days of the mission to Lagos was used to coordinate both on the workplan implementation and also to setup the RE & EE introductory training program for Eco Bank. The training was originally planned to take place over the course of three days, but was shortened to two days, at the request of the bank, due to the demanding schedules of the participants, who were all middle to top management personnel. The first day was spent in the SME head office with, amongst others: the SME Head Lagos Directorate and the Head SME Island Region, both of whom are project point persons.

Day 2: Workplan Set Up Workshop

The second day consisted of an interactive workshop session with ten attendants from top management, including amongst others, Head Local Corporates Lagos, Head SME Lagos Directorate, Country Head Power, and Head SME Island Region. Discussions covered the following:

a) Core Team EE - RE setup
b) Product Definition and General Procedures setup
c) Marketing Plan setup

Some of the take away conclusions that were learned were that the bank is interested in the long run to set up a ***Core Team*** EE-RE under the power desk – however the first step is to develop the business so as to justify full time staff. The Core Team is envisioned as cross departmental in the sense that it will serve as the bank's internal core on EE-RE financing – serving Corporate, SME, Micro and Retail clients.

In terms of ***Products***, it was agreed that it makes sense to set up different products for different target groups and also special ones that would be specific to types of Renewables such as Solar Power, Mini Hydro Power Stations, Wind Power Farms and Biomass related projects.

Lastly, ***Marketing Plan*** options were discussed and Mr. Wolkov presented lessons learned from international best practices. The bank management debated what would be the most appropriate roll out procedures for the products.

During Day 2, Mr. Wolkov also conducted a preliminary introduction on Energy Efficiency, as this is an area that had not previously been focused on within the bank.

Day 3 & 4: EE - RE Technical Workshop

The EE-RE Technical workshop was conducted by Mr. Wolkov and attended by 20 top and middle management staff from the bank (see attached list of participants). A brief summary of the training workshop

is provided below, and a draft agenda is attached. (Mr. Wolkov has already submitted the full set of training materials for the program).

1) Energy Efficiency and international best practices from projects in Slovakia, Serbia, Eastern Europe and India to give a wider perspective. To make the subject matter more relevant and lively, the trainer included several video clips illustrating EBRD and KfW funded projects, helping to explain EE and RE technologies and how these can benefit municipalities, businesses and private persons alike.
2) EE and RE Technical Interventions as well as Energy Audits were briefly described as well as various EE and RE calculators such as Retscreen. Of particular interest was a Solar Project finance calculator created by a German engineering company and implemented with South African municipalities, which could be localized to Nigerian conditions.
3) A very successful group activity held was how Ecobank -- with its up to 600 branches in Nigeria -- can save energy, taking into consideration that each branch has two large generators. Every branch uses between $10,000 - $20,000 PER MONTH for diesel. Added to this are electricity bills to the distribution company, maintenance costs for the generators and regular capital investments every couple of years for buying new generators. Multiplying this by 600 branches, the amounts spent on energy become very significant and alternatives discussed could be a combination of Energy Efficiency measures, Solar Panels and changing to gas to fuel the generators, which is cheaper in the long run and also more sustainable in terms of money, energy spent and CO2 emitted. The enthusiasm during this exercise was very heartening and gave hope that the management would try to sponsor this on a pilot basis in the near future.
4) Risk factors of EE/RE technologies were presented for each type of project to enable the participants to focus on the aspects that normally will make a successful implementation and financing of the most common EE/RE interventions/projects. What might cause a project to fail was also discussed extensively.

The feedback from top management was very positive.

A fifth day for field visits to see real projects was planned, but did not take place as the bank postponed it for a later date, due to holidays.

Suggested Next Steps

Suggested areas of focus for future consultancies include:

- Similar trainings rolled out to relevant staff both in risk and also front office / front line personnel, such as Account Managers and Branch Manager

- Site visits with bank staff to study EE/RE projects and support to bank staff on how to recognize EE/RE sale opportunities and technological interventions.

- Further support to the bank in developing the work plan implementation may also be considered.

ECO Bank Agenda and Work Schedule for 21st - 24th July 2014 Lagos

Participants & Location

1) Consultant on site Work on Work Plan Deliveries

Consultants Eco Bank

Day 1

21st July

Consultants will work in bank premises on Work Plan Development and Work Plan Deliveries with intermittent low intensity meetings with bank staff where necessary. Meetings will be kept at minimum to keep banks normal everyday work continuing.

2) EcoBank Energy Efficiency - Renewable Energy Setup Workshop

Relevant Department Heads, SME Department and proposed EE - RE Desk Officers - EB Training Facillities - 10 Participants

Day 2.	**9:00**	**9:20**	Course Introduction Agenda - Admin - Training Rules
22nd July	**9:20**	**10:30**	**Core Team Setup & Conclusions & Decisions**
	10:30	**10:45**	*Tea & Coffee Break*
	10:45	**12:15**	**Product Definition and General Procedures Setup & Conclusions & Decisions**
	12:15	**13:15**	*Lunch*
	13:15	**14:45**	**Marketing Plan Setup & Conclusions & Decisions**
	10:30	**10:45**	*Tea & Coffee Break*
	15:00	**16:30**	**Marketing Plan Setup & General Work Plan Modification - Next Steps**

3) EcoBank Energy Efficiency - Renewable Energy Energy Technical and Project Finance - *"How To Recognise and Source Projects and How to Finance Them" In Class Training*

Relevant Branch Managers, Account Managers, EE-RE Desk Officers - EB Training Facillities - 10-20 Particpants

Day 3.	**9:00**	**9:20**	Course Introduction Agenda - Admin - Training Rules
23rd July	**9:20**	**10:30**	**Nigeria EE-RE Sector and Opportunities for funding**
	10:30	**10:45**	*Tea & Coffee Break*
	10:45	**12:15**	**Introduction to Energy Efficiency Intervention Technologies + Energy Savings Calculations - Examples + Exercises - Energy Audits**
	12:15	**13:15**	*Lunch*
	13:15	**14:00**	**EE Intervention Technologies Continued. Introduction to Renewable Energy Intervention Technologies + Examples + Exercises - Energy Audits**
	14:00	**14:45**	**Introduction to Renewable Energy Intervention Technologies + Examples**
	14:45	**15:00**	*Tea & Coffee Break*
	15:00	**16:30**	**Introduction to Renewable Energy Intervention Technologies + Examples**
Day 4.	**9:00**	**10:30**	**Energy Efficiency Project Case Study - How to Source, Evaluate & Fund**
24th July	**10:30**	**10:45**	*Tea & Coffee Break*
	10:45	**12:15**	**Solar Power Project Case Study - How to Source, Evaluate & Fund**
	12:15	**13:15**	*Lunch*
	13:15	**14:45**	**Biomass Power Project Case Study - How to Source, Evaluate & Fund**
	14:45	**15:00**	*Tea & Coffee Break*
	15:00	**16:30**	**Wind Power Project Case Study - How to Source, Evaluate & Fund**

ECOBANK ATTENDEES FOR USAID/RE TRAINING ON RENEWABLE ENERGY

S/NO	STAFF NAME	POSITION
1	Layi Oresanya	HEAD LOCAL CORPORATES LAGSW DIRECTORATE
2	Sunkanmi Olowo	HEAD SME LAGSW DIRECTORATE
3	Theresa Lawal	HEAD SME ISLAND REGION
4	Sola Afolalu	HEAD SME APAPA REGION
5	Joy Nwaezeapu	HEAD SME MAINLAND REGION
6	Boye Elekuru	HEAD SME SOUTHWEST REGION
7	Funke Jones	COUNTRY HEAD POWER
8	Adesola Adewale	TEAM LEAD POWER
9	Goke Ajibola	HEAD RISK LAGSW DIRECTORATE
10	Tunde Awobutu	RISK ANALYST LAGSW DIRECTORATE
11	Peter Erameh	SME SS/SE DIRECTORATE
12	Ufuoma Akpeyabor	HEAD LOCAL CORPORATE SS/SE DIRECTORATE
13	Ignatius Agboneni	HEAD RISK SS/SE DIRECTORATE
14	Folake Aina	HEAD PERSONAL BANKING LAGSW DIRECTORATE
15	Daberechi Effiong	HEAD ASSET & LIABILTY PRODUCTS
16	Habeeb Lawal	PRODUCT OFFICER CONSUMER FINANCE
17	Dammy Oruwari	REGIONAL HEAD ISLAND
18	Funso Popoola	REGIONAL HEAD APAPA
19	Nike Kolawole	REGIONAL HEAD IKEJA
20	Godwin Eton	AREA MGR UYO